AMENDMENTS

Please enter the following amendments:

In the Claims

Please amend the claims as indicated below. The language being added is underlined ("___") and the language being deleted contains strikethrough ("—"):

1. (Original) A substrate adapted for use in integrated circuits, the substrate comprising:

a first substrate layer comprising an organic material;

a first conductor layer fabricated on an upper surface of the first substrate layer; and

an integrated inductor fabricated on an upper surface of the first conductor layer.

2. (Original) The substrate of claim 1, wherein the integrated inductor comprises a spiral inductor.

3. (Original) The substrate of claim 1, wherein the integrated inductor comprises a microstrip loop inductor.

4. (Original) The substrate of claim 1, wherein the organic material is at least one of an epoxy-based material and a liquid crystalline polymer.

5. (Original) The substrate of claim 1, further comprising a second conductor layer fabricated on a lower surface of the first substrate layer, the second conductor layer adapted as a ground plane for the first conductor layer.

6. (Original) The substrate of claim 1, wherein the integrated inductor and the first conductor layer are configured in a coplanar waveguide arrangement.

7. (Original) The substrate of claim 1, wherein the integrated inductor comprises a cascaded loop inductor comprising one or more microstrip loop inductors cascaded together.

8. (Original) The substrate of claim 1, further comprising a second conductor layer fabricated on a lower surface of the first substrate layer, wherein two points of the integrated inductor are electrically connected through a via connected to the second conductor layer.

9. (Original) The substrate of claim 8, further comprising:

a second substrate layer fabricated on a lower surface of the second conductor layer; and

a third conductor layer fabricated on a lower surface of the second substrate layer.

10. (Original) The substrate of claim 9, wherein the second substrate layer comprises an organic material.

11. (Original) The substrate of claim 10, wherein the organic material is at least one of an epoxy-based material and a liquid crystalline polymer.

12.-22. (Cancelled)

23. (Original) A substrate adapted for use in integrated circuits, the substrate comprising:

a first substrate layer;

a first conductor layer fabricated on an upper surface of the first substrate layer; and

an integrated inductor fabricated on an upper surface of the first conductor layer, the integrated inductor comprising a microstrip spiral inductor having a strip width between approximately 4 mils and 40 mils and a line spacing between approximately 2 mils and 4 mils.

24. (Original) The substrate of claim 23, wherein the first substrate layer comprises an organic material.

25. (Original) The substrate of claim 24, wherein the organic material is at least one of an epoxy-based material and a liquid crystalline polymer.

26. (Original) The substrate of claim 23, wherein the line width, line spacing, and number of turns for the microstrip spiral inductor are configured to optimize at least one of a frequency for a maximum Q factor, an effective inductance, and a self resonant frequency.

27. (Original) The substrate of claim 23, wherein the microstrip spiral inductor comprises a three-turn microstrip.

28. (Original) The substrate of claim 27, wherein the microstrip spiral inductor has a line width of approximately 10 mils, a line spacing of approximately 2 mils, and an area of approximately 4.4 millimeters^2.

29. (Original) The substrate of claim 28, wherein the microstrip spiral inductor has an effective inductance of approximately 12 nH at approximately 1.5 GHz, a maximum Q factor of approximately 80 at approximately 1.5 GHz, and a self resonating frequency of approximately 3.9 GHz.

30. (Original) The substrate of claim 27, wherein the microstrip spiral inductor has a line width of approximately 7 mils, a line spacing of approximately 2 mils, and an area of approximately 3.1 millimeters^2.

31. (Original) The substrate of claim 30, wherein the microstrip spiral inductor has an effective inductance of approximately 12 nH at approximately 1 GHz, a maximum Q factor of approximately 100 at approximately 1 GHz, and a self resonating frequency of approximately 3.2 GHz.

32. (Original) The substrate of claim 23, wherein the microstrip spiral inductor comprises a two-turn microstrip.

33. (Original) The substrate of claim 32, wherein the microstrip spiral inductor has a line width of approximately 10 mils, a line spacing of approximately 4 mils, and an area of approximately 3.2 millimeters^2.

34. (Original) The substrate of claim 33, wherein the microstrip spiral inductor has an effective inductance of approximately 7 nH at approximately 2 GHz, a maximum Q factor of approximately 100 at approximately 2 GHz, and a self resonating frequency of approximately 6.8 GHz.

35. (Original) The substrate of claim 32, wherein the microstrip spiral inductor has a line width of approximately 18 mils, a line spacing of approximately 4 mils, and an area of approximately 4.5 millimeters^2.

36. (Original) The substrate of claim 35, wherein the microstrip spiral inductor has an effective inductance of approximately 5.2 nH at approximately 2 GHz, a maximum Q factor of approximately 110 at approximately 2 GHz, and a self resonating frequency of approximately 7 GHz.

37. (Original) The substrate of claim 23, wherein the microstrip spiral inductor comprises a one-turn microstrip.

38. (Original) The substrate of claim 37, wherein the microstrip spiral inductor has a line width of approximately 34 mils, a line spacing of approximately 4 mils, and an area of approximately 3.2 millimeters^2.

39. (Original) The substrate of claim 38, wherein the microstrip spiral inductor has an effective inductance of approximately 1.5 nH at approximately 2.4 GHz, a maximum Q factor of approximately 170 at approximately 2.4 GHz, and a self resonating frequency of approximately 8.5 GHz.

40. (Original) A substrate adapted for use in integrated circuits, the substrate comprising:

a first substrate layer;

a first conductor layer fabricated on an upper surface of the first substrate layer; and

an integrated inductor fabricated on an upper surface of the first conductor layer, the integrated inductor comprising a coplanar waveguide loop inductor.

41. (Original) The substrate of claim 40, wherein the first substrate layer comprises an organic material.

42. (Original) The substrate of claim 41, wherein the organic material is at least one of an epoxy-based material and a liquid crystalline polymer.

43. (Original) The substrate of claim 40, wherein the number of loops comprising the coplanar waveguide loop inductor is configured to optimize at least one of a frequency for a maximum Q factor, an effective inductance, and a self resonant frequency.

44. (Original) The substrate of claim 40, wherein the coplanar waveguide loop inductor comprises hollow-ground coplanar waveguide loop inductor.

45. (Original) A substrate adapted for use in integrated circuits, the substrate comprising:

a first substrate layer;

a first conductor layer fabricated on an upper surface of the first substrate layer; and

an integrated inductor fabricated on an upper surface of the first conductor layer, the integrated inductor comprising a microstrip loop inductor.

46. (Original) The substrate of claim 45, wherein the configuration of the microstrip loop inductor is designed to optimize at least one of a frequency for a maximum Q factor, an effective inductance, and a self resonant frequency.

47. (Original) The substrate of claim 45, wherein the number of loops and the line width of the microstrip loop inductor are designed to optimize at least one of a frequency for a maximum Q factor, an effective inductance, and a self resonant frequency.

48. (Original) The substrate of claim 45, wherein the microstrip loop inductor comprises a single loop having a line width of approximately 2 mils and an area of approximately 3.5 millimeters^2.

49. (Original) The substrate of claim 48, wherein the microstrip loop inductor has an effective inductance of approximately 7.7 nH, a maximum Q factor of approximately 90 at approximately 2.4 GHz, and a self resonating frequency of approximately 7.2 GHz.

50. (Original) The substrate of claim 45, wherein the microstrip loop inductor comprises two cascaded loops.

51. (Original) The substrate of claim 50, wherein the microstrip loop inductor has a line width of approximately 6 mils and an area of approximately 4.3 millimeters^2.

52. (Original) The substrate of claim 51, wherein the microstrip loop inductor has an effective inductance of approximately 7.8 nH, a maximum Q factor of approximately 110 at approximately 2.1 GHz, and a self resonating frequency of approximately 6 GHz.

53. (Original) The substrate of claim 52, wherein the microstrip loop inductor has a line width of approximately 4 mils and an area of approximately 3.5 millimeters^2.

54. (Original) The substrate of claim 50, wherein the microstrip loop inductor has an effective inductance of approximately 10.2 nH, a maximum Q factor of approximately 85 at approximately 2.2 GHz, and a self resonating frequency of approximately 5 GHz.

55. (Original) The substrate of claim 45, wherein the microstip loop inductor comprises three cascaded loops.

56. (Original) The substrate of claim 55, wherein the microstrip loop inductor has an area of approximately 4 millimeters^2 and a first portion of the microstrip loop inductor has a line width of approximately 4 mils and a second portion of the microstrip loop inductor has a line width of approximately 8 mils.

57. (Original) The substrate of claim 56, wherein the microstrip loop inductor has an effective inductance of approximately 15 nH, a maximum Q factor of approximately 80 at approximately 1 GHz, and a self resonating frequency of approximately 3.2 GHz.

58. (Original) The substrate of claim 55, wherein the microstrip loop inductor has an area of approximately 4 millimeters^2 and a first portion of the microstrip loop inductor has a line width of approximately 4 mils and a second portion of the microstrip loop inductor has a line width of approximately 2 mils.

59. (Original) The substrate of claim 58, wherein the microstrip loop inductor has an effective inductance of approximately 17 nH, a maximum Q factor of approximately 70 at approximately 1 GHz, and a self resonating frequency of approximately 3 GHz.

60.-125. (Cancelled)